



## EXHIBIT E

### Statement of Justification



#### INTRODUCTION

The Loudoun County Sanitation Authority (LCSA) requests a Special Exception to construct two (2) elevated water storage tanks to be located south of Route 50, north of Braddock Road and east of Goshen Road. The elevated water storage tanks will have a height of approximately 170 feet. The tanks will be located on the ridge line/high ground elevation along the South Fork of Broad Run. The tanks will be located on a parcel that is approximately 5.7 acres in size and was proffered by the Stone Ridge Community Development (ZMAP 2002-0013 & ZCPA 2002-0004). The tank site layout has been arranged to accommodate the construction of two tanks. Once all required land use and engineering approvals and permits are secured LCSA will start construction of the first tank. The other tank will be constructed within a period of up to 10 years, following the completion of the first tank. The LCSA has been planning for these tanks for over 10 years and some of the key events that occurred to prepare for this project are presented as follows:

- The LCSA reviewed the above referenced Stone Ridge Community Development Rezoning Case No. ZMAP 2002-0013 & ZCPA 2002-0004. The LCSA commented to the Loudoun County Planning and Development that a water storage facility was necessary to provide service to this development and the surrounding Dulles South Community.
- The LCSA Water Distribution System Master Plan was prepared in 2002. This plan provided a comprehensive review of the water distribution system and recommended improvements in water supply and distribution from 2002 to ultimate build-out of the system. The Master Plan identified the necessary size and general location of the two (2) proposed water storage tanks in the Dulles South Community.
- During the referral process for the Stone Ridge Rezoning (ZMAP 2002-0013 & ZCPA 2002-0004), the LCSA commented to the Loudoun County Department of Planning that the applicant provide or acquire and dedicate to LCSA a five (5) acre site for a water storage facility. A two (2) acre site had been proffered previously with the original Stone Ridge Rezoning Application (ZMAP 1994-0017).
- The Stone Ridge Proffer Statement with Loudoun County, dated October 5, 2005, states that a five (5) acre site for a water storage facility will be provided as requested by LCSA.

The purpose of the proposed elevated water storage tanks is to maintain adequate pressure in the water distribution system and to provide storage for peak hourly water demands and fire protection to the Dulles South area. The proposed facilities will also allow the LCSA to remain in conformance with the Virginia Department of Health standards for Public Water Distribution Systems.

## **TANK SITE DESCRIPTION**

The water storage tank site will be an approximately 5.7 acre parcel, as generally shown on the Special Exception Plat, which was proffered to LCSA from the Stone Ridge Community Development in October 2005. The site will be subdivided from the developers existing 27.65-acre parcel (LCTM 100, Parcel 54, MCPI 247-28-4151). The existing zoning of the Stone Ridge tract is TR-1 (Transition Residential, 1 unit per acre). The LCSA has reviewed the location, height, and aesthetics of the elevated water storage tanks in details with the developer of the Stone Ridge Development.

Prior to selecting a tank site, LCSA authorized its independent consultant to prepare a tank siting study for the proposed Dulles South elevated water storage tanks. The purpose of the study was to select a site for the Dulles South tanks, taking into consideration a variety of economic and non-economic factors as well as LCSA and public input.

The scope of the study included the following tasks:

- Review previously identified potential sites and identify new potential sites.
- Review existing Master Plan and other previously prepared studies.
- Perform a non-economic screening analysis on the sites initially identified.
- Perform an economic analysis of the feasible alternatives remaining following the non-economic screening.
- Recommend a preferred tank site.
- Develop a conceptual site design.
- Assist LCSA in public outreach efforts throughout the project.

Upon the selection of a preferred tank site, as described above, a visual impact assessment was completed. The visual impact assessment included a large 6 foot diameter helium balloon being lifted to an elevation corresponding to the top of the Dulles South tanks at the preferred tank site. Residents were notified of the planned balloon test. Tank renderings were then developed from digital pictures taken at various locations around the preferred tank site during the balloon test to assess the visual impact the tanks will have on the surrounding area once constructed.

## **PROJECT JUSTIFICATION**

The LCSA is responsible for providing reliable and cost effective water service to its customers in Loudoun County. Pursuant to its public responsibility, the LCSA has identified, via its Water Distribution System Master Plan, the need for additional water storage in the Dulles South area in the vicinity of the proposed Stone Ridge development. The proposed water system improvements will initially consist of the construction of one (1) – three (3) million gallon elevated water storage tank. The additional water storage tank will be built within a period of ten (10) years. The proposed improvements are required to meet growing water system demands as described below:

1. Water Service – The Dulles South area has been experiencing rapid development. Large-scale developments, such as Stone Ridge, will greatly increase the water consumption demand and fire protection needs in the vicinity of the proposed water storage tanks. As a result, LCSA must be able to meet fluctuations in minimum, average day and peak hour water usage demands. The proposed water storage tanks will provide six (6) million gallons of combined water storage capacity to the LCSA water distribution system. Water will be stored in the elevated storage tanks until the water is needed, at which time water will be drawn from the tanks to meet peak water demand and fire protection needs. The tanks will fill when the system water demand is low.
2. Water Service Pressure – The proposed water storage tanks will be essential in maintaining necessary water service pressures in the Dulles South area. The Virginia Department of Health regulation requires that water be delivered at a minimum pressure of 30 pounds per square inch (psi) during normal and peak demand times and a minimum of 20 psi during fire flow requirements. Water pressure will be maintained in the Dulles South service area by the height of the water in the tanks. The higher the water level in the storage tanks, the higher the water pressure in the water distribution system. An elevated water storage tank stabilizes the pressures over a large area because, in times of excess water demands, a large volume of water can be withdrawn from the storage tank without appreciably reducing the height of the water level in the tank. During periods of low water demand, the tanks will refill. The overall result is that water pressure variations will be maintained under high and low demand periods, in accordance with LCSA and the Virginia Department of Health regulations.
3. Height Requirements – The height of the proposed water storage tanks is controlled by the site ground elevation and the necessary water distribution system pressure requirements.

The site was chosen and proffered to LCSA by the Stone Ridge Community Development in October 2005 because of the ground elevation and proximity to future demands in the water distribution system. This site is located on the ridge line/high ground elevation along the west side of Relocated Route 659. The site ground elevation at the base of the proposed tanks ranges from Elevation 354± to 359±. This is the highest ground elevation in the area.

In order to maintain adequate water pressure in the water distribution system, the overflow elevation of the proposed tanks is required to be 510 feet. The resulting height of the proposed water storage tanks will be 170 feet. In accordance with Section 1-103(D)(2) of the 1993 Revised Zoning Ordinance, the site was configured to provide a 170 feet from the property lines to the outer tank wall; thus, height limitations within the ordinance do not apply.

In the future, the water storage tanks may be utilized to mount communication antennas. These antennas may not exceed the height of the tanks (170 feet). It is understood by the LCSA that a Commission Permit may be required to add communication antennas to the tanks.

4. Storage Requirements – The Virginia Department of Health requires public water systems to maintain a minimum storage capacity of 200 gallons per equivalent residential connection (ERC). One ERC is defined as 400 gallons per day (typical residential demand). Essentially, the LCSA must have the ability to store an amount of water equivalent to approximately half of its average daily water demand. As development causes the LCSA customer base to increase, the average daily water demand increases as well. In order to meet the state mandated water storage requirements in the future, the LCSA must construct the additional water storage capacity.
5. Public Outreach - LCSA employed a thorough public outreach program to spread awareness of the need for the tanks, the purpose of the tanks, and to obtain buy-in and support for the location of the tanks. An initial site assessment revealed three plausible tank sites in the Dulles South Area. LCSA mailed an invitation for participation in the site selection process to 6,000 residents who lived within a two-mile radius of each of the three sites. Approximately 15 people responded with interest in participating in the process and ultimately 11 citizens met with LCSA. The citizens were provided a basic overview of water storage science, including water system hydraulics, to get a sense of the importance of the location. The citizens applied a ranking and a weight to various criteria typically considered for the site of an elevated storage tank. LCSA and its independent consultant completed the same exercise. The citizen's scoring of the three sites against the criteria generated the same outcome as LCSA's and its consultant's: the Stone Ridge site would be the best site. LCSA communicated this information to the 6,000 residents from the original mailing, posted it at its website, and the information was featured in the Loudoun Times Mirror.

Overall, the proposed water storage tanks will increase the reliability of the LCSA water distribution system. The LCSA desires to start construction of the proposed tanks as soon as approvals can be obtained. The LCSA is projecting that first 3 million gallon water storage tank can be in operation approximately 18 months after construction commences.

In addition to the Special Exception request, a Zoning Concept Plan Amendment (ZCPA) to the previous Stone Ridge rezoning (ZMAP 2002-0013) is being requested. The approved Concept Plan inadvertently showed the proffered tank site hatched the same way as the surrounding open space. The purpose of the ZCPA is to remove the proposed tank site from the open space within Landbay 1. Since the proposed lot coverage on the tank site is greater than 1%, the lot must be removed from the open space. The final development of Landbay 1 will meet the open space requirements of the TR1-UBF zoning district exclusive of the proffered tank site.

#### **ISSUES FOR CONSIDERATION FOR SPEX**

Specific items for consideration are identified in the 1993 Loudoun County Zoning Ordinance as amended on July 10, 2000. The following is a summary of the issues for consideration as identified in this amendment:

- A. The proposed Special Exception is consistent with the Loudoun County Comprehensive Plan.
- B. The water storage facility will be constructed of steel and concrete materials and will not pose a fire hazard. The stored water in the tank facilities will enable the surrounding communities to have adequate fire flows and pressure.
- C. There will not be any noise emanating from the proposed use and operation of the water storage tanks.
- D. General site lighting at the water storage tanks will be in accordance with Section 5-1504 of the Loudoun County Zoning Ordinance. A light at the top of the tank will be provided for aircraft warning. The lighting will be in accordance with FAA requirements and will not pose a glare hazard to the communities or roadways.
- E. The use of the water storage facility is compatible with future adjacent residential neighborhoods. The communities will be dependent on the water storage facilities to maintain adequate water supply and pressure in the area. The storage facilities will be similar to the existing LCSA Brambleton elevated water tanks.
- F. The existing site is currently heavily wooded. Except where the access road enters the site, a minimum 50-foot undisturbed buffer yard will be provided around the perimeter of the site (see the Site Plan and Special Exception Plat). There is a mixture of mature evergreen and deciduous trees on the site. Section 5-621 of the 1993 Revised Loudoun County Zoning Ordinance requires a Type 4 buffer that will be provided in accordance with Section 5-1414 (B) (4).
- G. This project will not require extensive grading work at the site. This will serve to preserve trees and topographic features in the surrounding area.
- H. No impact to the surrounding animal habitat, vegetation, water quality or air quality is anticipated as a result of this project.
- I. This project will contribute to and promote the welfare and convenience of the public by providing a reliable water distribution system to the community. This project will provide water storage and adequate pressure for peak hourly demands and fire protection.
- J. The water storage tanks will require only a minimal level of inspection by the LCSA as part of a normal maintenance schedule. There will be no impact to the traffic on local roads or the pedestrians in the vicinity of this project.
- K. through M. These issues do not apply to this project.
- N. This project will be designed in accordance with the structural capacity of the soils. This project will not impact the surrounding soils.

- O. This project will not have any impact on the development of safe roadways and transportation.
- P. This project will provide for the expansion of the tax base by improving the water distribution system in the area.
- Q. The proposed Special Exception reflects two water tanks with storage volumes and locations consistent with the 2002 LCSA Water Distribution System Master Plan. This incorporates all anticipated users of the water distribution system.
- R. A segment of water main will be installed to connect the water storage tank to a proposed 24-inch water transmission main along Tall Cedars Parkway.
- S. This project will not generate any odors.
- T. Construction traffic for this project will utilize the gravel access easement illustrated on the site plan. No existing neighborhoods or school areas exist in the vicinity of this access road.

### **ISSUES FOR CONSIDERATION FOR ZCPA**

Section 6-1211(E) of the Loudoun County Zoning Ordinance lists specific items for consideration. The following is a summary of the issues for consideration as identified in this amendment:

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| <u>Standard</u> | <i>Whether the proposed zoning district classification is consistent with the Comprehensive Plan.</i>  |
| <u>Analysis</u> | The existing zoning district is TR1-UBF, which is consistent with the Comprehensive Plan.  |
| <u>Standard</u> | <i>Whether there are any changed or changing conditions in the area affected that make the proposed rezoning appropriate.</i>  |
| <u>Analysis</u> | The Dulles South area has been experiencing rapid development. Large-scale developments, such as Stone Ridge, will greatly increase the water consumption demand and fire protection needs in the vicinity of the proposed water storage tanks. As a result, LCSA must be able to meet fluctuations in minimum, average day and peak hour water usage demands. |
| <u>Standard</u> | <i>Whether the range of uses in the proposed rezoning district classification are compatible with the uses permitted on other property in the immediate vicinity.</i>  |
| <u>Analysis</u> | The use of the water storage facility is compatible with the future adjacent residential neighborhoods.  |
| <u>Standard</u> | <i>Whether adequate utility, sewer and water, transportation, school and other facilities exist or can be provided to serve the uses that would be permitted on the property if it were rezoned.</i>   |

Analysis The proposed water tanks will contribute to providing a reliable water distribution system to the surrounding community. The proposed water tanks will have no adverse impact to transportation, schools or other facilities.

Standard *The effect of the proposed rezoning on the County's ground water supply.*

Analysis No impact to the ground water supply is anticipated as a result of the proposed water tanks.

Standard *The effect of the uses allowed by the proposed rezoning on the structural capacity of the soils.*

Analysis The proposed water tanks will be designed in accordance with the structural capacity of the soils. This project will not impact the surrounding soils.

Standard *The impact of the uses permitted if the property were rezoned will have upon the volume of vehicular and pedestrian traffic and traffic safety in the vicinity and whether the proposed rezoning uses sufficient measures to mitigate the impact of through construction traffic on existing neighborhoods and school areas.*

Analysis The proposed water tanks will be accessed from existing Goshen Road. The water storage tanks require only a minimal level of inspection by the LCSA as part of a normal maintenance schedule. There will be no impact to the traffic on local roads or the pedestrians in the vicinity of the project. Construction traffic for this project will utilize the gravel access easement illustrated on the site plan. No existing neighborhoods or school areas exist in the vicinity of this access road.

Standard *Whether a reasonably viable economic use of the subject property exists under the current rezoning.*

Analysis The original zoning of the site was PD-GI which would have also allowed a water storage tank by special exception.

Standard *The effect of the proposed rezoning on the environment or natural features, wildlife habitat, water quality and air quality.*

Analysis No impact to the surrounding animal habitat, vegetation, water quality or air quality is anticipated as a result of the proposed water tanks.

Standard *Whether the proposed rezoning encourages economic development activities in areas designated by the Comprehensive Plan and provides desirable employment and enlarges the tax base.*

Analysis The proposed water tanks will contribute to the economic development of the area by providing a reliable water distribution system to the community.

Standard *Whether the proposed rezoning considers the needs of agriculture, industry, and businesses in future growth.*

Analysis The proposed water tanks consider the future growth needs of industry and businesses in the community.

Standard      *Whether the proposed rezoning considers the current and future requirements of the community as to land for various purposes as determined by population and economic studies.*

Analysis      The proposed water tanks are a necessary facility to meet the growing water system demands within the Dulles South area. Land for this use was proffered with the Stone Ridge community.

Standard      *Whether the proposed rezoning encourages the conservation of properties and their values and the encouragement of the most appropriate use of land throughout the County.*

Analysis      The proposed water tanks will contribute to and promote the welfare and convenience of the public by providing a reliable water distribution system to the community.

Standard      *Whether the proposed rezoning considers trends of growth or changes, employment, and economic factors, the need for housing, probable future economic and population growth of the County.*

Analysis      The project reflects two water tanks with storage volumes and locations consistent with the 2002 LCSA Water Distribution System Master Plan. This incorporates all anticipated users of the water distribution system.

Standard      *The effect of the proposed rezoning to provide moderate housing by enhancing opportunities for all qualified residents of Loudoun County.*

Analysis      This Zoning Concept Plan Amendment only deals with the proposed water tanks site. No changes are being proposed to the residential portions of the CDP.

Standard      *The effect of the rezoning on natural, scenic, archeological, or historic features of significant importance.*

Analysis      The proposed water tank site contains no known significant natural, scenic, archeological or historic features.

## **SUMMARY**

The proposed location and size of the proposed water storage tanks are in conformance with the "2002 LCSA Water Utility System Master Plan." The project will maintain water supply service and water pressures in the Dulles South area. The project is also required to meet the state requirements for storage in the water distribution system. As a result, the project will enable LCSA to meet these requirements as necessitated by the growing water needs in the area. For these reasons, the Loudoun County Sanitation Authority respectfully requests Special Exception approval for this project.